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PSYCHOLOGY AND SCIENTIFIC METHODS

NOTES UPON LOGICAL TOPICS

I. A CLASSIFICATION OF CONTEMPORARY TENDENCIES[1]

IT is an interesting example of the irony of history that it was Kant who remarked, about a century and a quarter ago, that since Aristotle logical theory has neither lost nor gained an inch—that it appeared complete and settled. To-day the greatest difficulty students of logic have to contend with is the variety of independent and specialized points of view, a variety so great that it is almost impossible for any one person to be at home in all of them, independently of the diversity of opinion found in any one of them. A rough attempt to catalogue these various points of view and tendencies, even when undertaken by one quite ignorant in some of the fields, may be of use at least in defining some problems which are pressing in the further development of logic. Accordingly, a rough scheduling of tendencies follows.

1. *Formal Logic.*—The logic of scholastic tradition. It was, of course, formal logic which Kant, wrongly ascribing to Aristotle, regarded as finished and settled. But Kant's very insistence upon the purely formal character of thinking as such—his insistence that pure logic has nothing to do with any of the objects or contents of knowledge, being confined to analytic consistency with reference to identity and non-contradiction, was one of the chief forces in calling out by reaction other conceptions of logic.[2] The more rigorously one carries out the program of excluding from logical theory all reference to truth, belief and the evidential value of data, the more

[1] I am glad to take advantage of the foundation of a publication of this type to record notes which are too informal to justify publication in more finished shape, and yet which, as notes of a student, may be of some use to other students of the same subject.

[2] See, for example, how Hamilton and Mansel, who followed Kant in applying logic to formal laws of thinking, evoked the reaction of Mill on the one side, and of T. H. Green on the other. Mill, 'An Examination of Sir William Hamilton's Philosophy,' 1865, and T. H. Green, 'Works,' Vol. II., 'Logic of the Formal Logicians.' (Lectures delivered in 1874–5.)

apparent the emptiness of such logic becomes, and the more the mind seeks for some other conception of thought to serve as a basis for logic of another type.

2. *Empirical Logic.*—Hence it was inevitable that when the rationalistic school went to seed in its doctrine of a purely empty thinking process, empiricism strove to build up a constructive logic of 'experience' as a source and guarantee of practical and scientific truths. John Stuart Mill was, of course, explicit in teaching that true logic is concerned with adequacy of evidence and proof, with the validating and discrediting of belief—with, in a word, all the processes which have to do with the consideration of any truth which is not self-evident. Rarely has any piece of intellectual work met so fully the need which called it out, and imposed itself so overmasteringly upon its generation, as did the logic of Mill. The empiricist, since Mill, repeats by his actions, if not by his words, what Kant said of Aristotle, that logic is henceforth complete and settled.[3]

The tendency of current textbooks to incorporate within themselves both the formal and the empirical logics, as if they simply amicably divided the field between them, is a good illustration of the capacities of the human mind. The assumption that thought has a deductive and an inductive process, which work by different laws, and that the formal, syllogistic logic adequately describes the deductive function, while the empirical logic as adequately represents the inductive, furnishes as striking an instance as one could find of the catholic willingness of the human mind to accommodate itself even to diammetrically opposite assumptions provided that will save the trouble of systematic, reconstructive thinking.

3. *Real Logic.*—I use this term not as assuming that this sort of logical theory is 'real,' while others are artificial, but as a phrase, in the absence of any commonly recognized designation, with which to refer to those tendencies which give thought itself a content, and which reach their limit in the assumption that truth itself is just the perfected content of thought. The irony of history, to which I alluded at the outset, is, of course, the fact that it was Kant's transcendental logic which brought to an end the settled and fixed condition he attributed to logic. His so-called transcendental logic was nothing more nor less than an attempt to show the positive part played by thought in the determination of any experience which is capable of having attributed to itself the distinctions of truth and falsity.

[3] Nevertheless, the work of John Venn, 'Principles of Empirical or Inductive Logic,' London, 1889, is such an independent rendering of Mill as to be worthy of more attention than it receives in the current Teutophile philosophy.

Under this head come all who have been positively influenced by the Kantian theory of judgment as involving an objective synthesis, possible only through certain thought functions. It is a term, therefore, which has to be applied largely by way of contrast. It includes almost all those who do not believe in the purely formal notion of thought, and yet are unwilling to accept empiricism. It names certain tendencies rather than any very homogeneous or defined body of thought. To take some of the best known writers, the names of Bradley, Bosanquet, Lotze, Sigwart and Wundt would all appear here, much as they differ from one another.

These three captions refer to movements that are sufficiently well defined to be termed schools of logical thought. They represent, that is to say, intellectual standpoints which have become sufficiently conscious of themselves to get formulation, and to be aware of their incompatibilities with one another. The tendencies that I am about to schedule are rather just tendencies. They are forces at work rather than schools of doctrine. Consequently, they are not necessarily incompatible either with one another or in all respects with the three tendencies just mentioned.

4. Attempts to reform the traditional syllogistic and inductive logics so as to bring them into greater accord with 'common sense' and with the methods and results of scientific inquiry. Such attempts, in the main, start from the accepted terminology of logical theory and try to free it from those connotations which attach to it in virtue of either the scholastic or the empirical standpoints; and to show how, without accepting any particular philosophical standpoint, logical conceptions must be interpreted in order to meet the working logic of practical life, and of scientific investigation and verification. To my mind the best representative of this tendency is Professor Alfred Sidgwick, and as I hope to devote one of my later notes specially to his reformatory work, I shall say nothing more about it here.

5. *Mathematical Logic.*—Under this head two tendencies are to be noted. One is the disposition to interpret and to construct logic as mathematics, and the other to build up the system of mathematical science as itself the adequate representative of logic. Most systems of symbolic logic illustrate the former. By the latter I mean the work which has been done primarily by mathematicians as mathematicians under the conception that mathematical science is in no sense limited by the concept of quantity, but has to do with all reasoning which may be exhibited in necessary form or that deals with necessary conclusions. I am not enough of a mathematician to characterize this movement closely, but I am sure I am not far out of the way in referring to the work of Benj. Pierce, and of the recent

Italian school of Peano as typical examples. I suppose this strictly logical tendency has been much more influential in building up the hyperspace geometry and the modern theory of numbers than the layman recognizes. In our present condition of specialization it is somewhat difficult for one and the same person to be well posted on the more general and philosophical aspects of logical theory, and at the same time to be at home in the recent development of scientific mathematics. I am inclined to believe that a person who should be properly equipped on both sides, and who was also at home in recent psychology, could render the logic of reasoning a very great service. Professor Royce has already given us some tantalizing specimens of what is possible in this direction.[4]

Among those who are interested in logic from the mathematical side there seems to be a further division of tendency. One school seems explicitly or implicitly to hold by the traditional formal logic, and to be engaged in making it more rigorous by the use of symbols, thus carrying out the program of more strict formalism, eliminating ambiguities arising from context and putting the formulæ of logic into a more compact and sequential form.

But, on the other hand, Mr. C. S. Peirce (if I interpret him aright) believes that one of the chief advantages of the mathematical, or symbolic statement is that logic may transcend thereby the limitations of mere formalism and become a potent instrumentality in developing a system which has inherent reference to the pursuit of truth and the validation of belief.

6. *Psychological Logic.*—Without in any way prejudging in advance the question as to whether logic and psychology are independent disciplines which can be brought into contact with each other only at the risk of corruption to both, one may note the fact that there is a renaissance of interest in the psychology of the reflective processes. This psychological development is giving at once such a novel and such a significant interpretation of the nature of thought in general, and of its various phenomena in particular, that it is hard to see how it can continue without in time affecting somewhat profoundly the consideration of strictly logical problems. If, for example, psychologists should come to a pretty definite consensus that thinking is originally conditioned by inhibited and, therefore, postponed action, it would seem as if such a view could not fail to modify the details of logical theory. Professor James's identification of

[4] I refer especially to parts IV. and V. of the second chapter of his 'World and the Individual,' Second Series, and to his presidential address upon 'Recent Logical Inquiries,' *The Psychological Review*, Vol. IX., p. 105. I do not include his supplementary essay in the first volume of his 'World and the Individual,' because he has (unfortunately, it seems to me) given his interpretation an ontological rather than a logical turn.

abstraction with a selective function, taking place on the basis of interest, which runs through all psychical processes whatsoever, and his theory of the teleological nature of conception, if accepted in psychology, can hardly fail to carry with them some kind of moral for logic. And, to take an instance that is seemingly somewhat more remote from logic proper, his conception of the stream of consciousness as involving a rhythm of substantive and transitive sort, and of carrying with it necessarily a certain relationship between the more or less definite (or, what is the same thing, the more or less vague) must be either true or false in psychology—and if true in psychology must modify in some way or other the conception of thought that obtains in logic.

7. *Logic in Connection with Comparative and General Grammar.* —It goes without saying that logic in its beginnings, logic at the hands of Plato and Aristotle, went along with and was largely dependent upon an analysis of the sentential structures in which thought is embodied. Logic more than repaid what it borrowed from its analysis of language fixing the categories of grammar and language study for many centuries. The science of language had practically no independent existence, but was a mode of phrasing the recognized distinctions of classic logical theory. But, as every one knows, within the last hundred years the study of language has entered upon an independent development of its own, and has now practically shaken itself free from the incubus of its externally imposed categories, which in turn originated from a more superficial study of linguistic phenomena. The time has about come, I think, when logic may again borrow from the extensive and profound analysis of language in as significant and important a way as the logic of Aristotle borrowed from the narrow and obvious language data at command.

Up to the present those who have attempted to make the connections between general grammar and logic have, for the most part, been already committed to a certain psychology. I do not wish to be ungrateful to the services rendered by Steinthal and his followers, but it seems to me, nevertheless, true that their efforts have been very much compromised (and this is true also in some degree, I should say, of Wundt) by the attempt to fit the results of philology into the *cadres* of a preexistent psychology, the Herbartian. The situation will be more promising in the degree in which students of language, working freely with their own data, and using psychology only as a working tool, make their own logical renderings and translations. It would not be difficult to gather from modern grammarians of the comparative and historical schools, a large body of data of great significance for the logical theory of propositions and terms—that is, of judgment and ideas.

8. *Logic and Scientific Methods.*—Of course, the status of scientific method has always had reflex influence upon logic; but in the main this has taken effect in the past through the efforts of those who were already logicians in utilizing the methods of experimental science in connection with the building up of their own systems. Without ignoring the tremendous fluctuation that has come to logic from such endeavors, we may expect, I think, still more fertilization when scientific men undertake an independent statement of the logical bearings of their own modes of procedure. We clearly are entering upon this stage of development. It is necessary only to refer to such names as Poincaré, Boltzmann and Mach.

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THE NECESSITY FROM THE STANDPOINT OF SCIENTIFIC METHOD OF A RECONSTRUCTION OF THE IDEAS OF THE PSYCHICAL AND THE PHYSICAL

SCIENCE is the attempt to give a rational explanation of the universe. Its earliest systematic statement is that of the so-called physical sciences—astronomy, physics, chemistry—in which the world is interpreted in purely mechanical terms. Nature is a mechanism. The concepts with which science operates in this stage are matter and motion. The material units, atoms, which make up the universe, are in constant movement. There is an extended substance, and this substance is in process of universal change. Ultimately, reality consists simply of atoms and their movements. There may be all sorts of combinations of these atoms; they may stand in all sorts of relations by reason of their ceaseless change; but ultimately there is conceived to be a substance, called matter, lying back of the changes. Matter is the permanent core of reality which runs through the changes, which underlies the movements of the atoms and makes them possible. This is the philosophical postulate of the earliest scientific physics—the existence of matter in motion. Inasmuch as matter is made fundamental in the conception, and this matter is conceived as given in little bits or units called atoms, this may be called the static conception of the universe, the lump theory of reality. The view has been held by mechanical scientists and philosophers from the time of Democritus. And it must be said that great fundamental principles have been established from this standpoint, which more recent science has restated rather than overthrown.

But, with the progress of scientific inquiry, especially with the advance of experimental investigation, the fact of change, of motion, has become more and more prominent, while the conception of an abiding substance postulated as underlying the changes has receded from view. The existence of matter has not been disproved, but its utility as a concept in its old static form has vanished in the light of a new understanding of the nature of motion. In place of dead inert matter have been put the positive conceptions of energy and force. Motion was formerly regarded simply as the phenomenal manifestation of some real entity—matter—lying behind, or it was conceived as a force operating upon matter from without. Under the name of energy, motion is now regarded as itself the essence of reality, and the idea of brute, lump matter drops away. In place of the static we get a dynamic theory of the nature of reality. *Substance c'est l'action.* What was formerly called the material object or thing is now regarded as simply the latent or potential as contrasted with the active or kinetic form of energy. Instead of speaking of the indestructibility and homogeneity of matter, science now speaks of the permanence of force and the interconvertibility of energy. An atom is a center of motions, a vortex ring, the focus of a system of forces, an equilibrium of opposing energies. This is the dynamic or energistic view quite generally held by philosophical physicists to-day.

But while this dynamic view is transforming physics, another group of sciences—the biological—is coming into prominence. Biology existed alongside of physics, of course, from the first. But the nineteenth century is the epoch of the great development of the sciences of life. The statements of physics and chemistry are not the whole story. Nature is not only a mechanism. It is an organism. The biological categories do not negate those of physical science. On the other hand, the tendency of biological science has been steadily opposed to vitalism with its doctrine of occult force. It makes the fullest use of chemical and physical laws in explaining organic phenomena. At the same time, it recognizes that the organism is not a mere machine, as that term is customarily used; it is a living machine.

Here, again, we see progress from a static to a dynamic conception of life. Early biology was content with a doctrine of special creation, of fixed species, of a special vital force. Morphology in the modern sense was unknown. But with the rise of the genetic and comparative methods in science, biology has come to see the essential unity and continuity of all organic processes. The concepts of heredity and transmission, of variability and selection, of development and evolution, emphasize the idea of growth, as physical

science has emphasized the idea of ceaseless change or motion. And here, as before, scientific thought does not rest until it generalizes the idea. Evolution becomes a universal law of nature. The universe is a vital, living whole. It is organic. There is a cosmic life and a cosmic evolution; the principle of continuity requires it.

At first the conception of growth was restricted to a certain sphere called the organic realm. But investigation showed that the vital is built upon the basis of the mineral world, that the organic actually assimilates and incorporates the inorganic, building it into its tissues. The difference between the inorganic and the organic seems to reduce simply to a difference in organization. The difference is not a difference in kind, but only in degree or complexity of organization. This is shown, indeed, by the fact that the biologist falls back upon the chemicophysical laws for the explanation of vital processes. From this point of view, therefore, the universe may rightly be called an organism, without departing from the biological definition of an organism as a self-perpetuating system or mechanism in which the constituent parts are related reciprocally as means and ends. The evidence tends increasingly to show that the universe is an organic, and not merely a mechanical, whole. If the chemicophysical categories are to be carried up throughout the world of life, the biological categories must be carried back to the interpretation of the world of matter and motion. Either the chemicophyscial laws do not hold in the biological sphere—in which case there is a distinct vital force, and this contradicts the law of the conservation of energy—or they do hold in the biological sphere, in which case the idea of mechanism must be extended to cover the phenomena exhibited by organic life. And if the organic differs from the inorganic simply in degree of organization, then, on the same principle, it is not only legitimate, but distinctly illuminating, to carry back the biological categories to correct the inevitable abstractions made in the physical sciences.

This sufficiently meets the arguments of those who, like Professor Ostwald, would subordinate psychical phenomena to the idea of energy. The bare concept of energy, even when interpreted from the modern standpoint of dynamism in physics, is too poor to express the contents of the ideas of life and mind. Unquestionably, these latter concepts, as they are at present used, will have to be modified before they will form a continuous series with the concept of energy. The only point here urged is that the modification can not be all on the side of the biological and psychological categories. The concepts of biology and psychology must reconstitute the concepts of physical science as truly as the converse. Indeed, is not the modern concept of energy itself a good illustration of the ideali-

zation of a material category, of the spiritualization of matter? Psychical phenomena are not to be 'subordinated' (the term is Professor Ostwald's) to the concept of energy, but both concepts are to be reconstituted, each in terms of the other. Viewed in this light, one may even accept the words of the writer just mentioned, when he says: 'In all that we know of intellectual processes, there is nothing to hinder us from regarding them as a particular form of energetic activity.'[1] Indeed, this is just the present tendency of a certain school of psychology—to interpret all psychical phenomena functionally, *i. e.*, in terms of action, activity, energy, if you please.

As has just been intimated, another step remains to be taken beyond the physical and the biological standpoints. Besides the physical and the biological there are the psychological sciences. Besides matter and motion, besides the organism and life, there is consciousness and personality. The twentieth century bids fair to be the epoch of scientific psychology. The greatest theoretical problem of the science of the present day is as to what it is going to do with consciousness. On the one side, science is inclined to regard consciousness as simply one phase, and that a comparatively recent phase, of evolution. But is consciousness, in this case, to be interpreted solely in terms of the physicochemical, or even in terms of the biological, categories? If so, then these categories will have to be so revised as to do justice to the new facts.

On the other side, scientists, as well as metaphysicians, have not been slow to see that there is a sense in which the very existence of the external world, and the science of this world, are conditioned upon consciousness. An object, or a universe, that appears to no one, that is not present to some consciousness, that is not an object of knowledge by some intelligent being, would seem to be simply nonexistent. There appears to be a sense in which the system of the universe has been built up in the scientific consciousness of the race, analogous to the way in which the world of space and time is built up in the consciousness of the child. From this point of view consciousness seems to condition the very possibility of science. How, then, can consciousness be simply a relatively late product of biological evolution? If time (including the historical development of science) has been built up in consciousness, how can consciousness be an evolution in time?

The solution of this apparent paradox lies in seeing that consciousness, taken apart from the organism which is conscious, is not an entity or thing or even a process; it is simply meaning or significance. Consciousness, taken in abstraction from body, is like what

[1] Ostwald, 'The Philosophical Meaning of Energy,' *International Quarterly*, VII., No. 2, June, 1903, p. 313.

you get when you attempt to conceive function abstractly, apart from the organ or structure which functions. Function, thus conceived, signifies no more than a sum of relations or meanings.[2] The enigma reduces, therefore, to a mere verbal fallacy. After abstracting the psychical, by definition, from the physical, there still cling to our psychological statements of the nature of consciousness traces of our conceptions of material objects. There is no actual consciousness apart from an organism. But in our thinking and speaking concerning consciousness we split apart these two aspects of the psychical and the physical for purposes of discussion. They are one, but in the very act of saying it we make them two. Any thinking or speaking is a polarizing into two aspects in thought of what is an undivided unity for action. This, of course, is a methodological, not an ontological dualism; hence is paradoxical only for him who forgets its methodological origin.

Psychology illustrates this split in scientific thinking. And psychology too often fails to remember that its abstractions are simply methodological devices or instruments and not an actual duality of existences. If this important point is kept in mind, the paradox of psychophysical parallelism disappears, and this apparent contradiction between time and consciousness is cleared up. Consciousness is in time, of course, when consciousness is regarded as it actually exists, as functioning of the nervous system. Time is in consciousness just as truly, however, when consciousness is regarded as the bare significance or meaning, in abstraction from its existential or physical basis, the body; for time, from this standpoint, is just one meaning among others. The solution of the antinomies which arise in the conflict of the different sciences is to be found in interpreting them always in terms of the methodological abstractions with which these sciences operate.

Here, then, as in the previous cases, the truth lies in generalizing, in universalizing, the laws of the new science. The conception of consciousness must be extended to the entire universe. The universe is a mechanism. It is an organism. The universe is also a conscious personality. Whether or not this is to become mere metaphysical verbiage will depend upon one's conception of consciousness and of personality.[3] Certain it is that this is the only escape from the blind alley into which modern science has brought us in its doctrine of psychophysical parallelism, which insists at once that consciousness is the universal

[2] Cf. Bawden, 'The Functional Theory of Parallelism,' *Philos. Rev.*, May, 1903, 299–301, on this point.

[3] See a forthcoming article in the *Philosophical Review* on the 'Meaning of the Psychical from the Standpoint of the Functional Psychology.'

accompaniment of the material body, yet has absolutely nothing to do with the continued existence of that body. This absurdity can only be escaped by revising our conceptions of consciousness and the self. Consciousness is not a thing, an entity, a force, any more than the function of an organ is a part of its structure. The function of an organ is the activity of that organ, its orderly and continuous operation with reference to an end or norm. Consciousness, or the psychical, in the same sense, is the functioning of the material or physical universe. Consciousness is not an entity, a thing; it is a function, a meaning. There is no more reason for making an entity out of consciousness than out of habit. We no longer speak of mind *and* its faculties, of functions and that which *has* the functions. The mind does not *have* functions; it *is* the functions. It is real only in its activity, or rather, its activity, its functioning, is its reality. Its various 'faculties'—sense-perception, memory, imagination, etc.—do not 'belong to' the mind; they *are* the mind. Each factor is the function of a common activity, a moment in the single process.

Now just as an organ may be relatively at rest or in active operation, so the universe, or any portion of it, such as the organism itself, may be in a relatively stable or in a relatively tensional state. An experience is psychical in so far as it is being made focal. Any experience is psychical in so far as it is treated as having been modified, as being modified, or as capable of being modified, in consciousness. That is, its psychical quality depends upon its relation to the process of tension or reconstruction. And the only sense in which there is any meaning in the concept of ' unconscious mental states ' is that certain phases of experience are what they are because of their having been or their capacity for being thus mediated. Consciousness is not something which belongs exclusively to you or to me. It is simply our name for tension, for variation, for progress, of the whole system of reality. This is the general principle. Whether and how consciousness appears in any given focus of forces in tension is an empirical problem upon which physiological and comparative psychology are beginning to throw some light.

When tensional, reality bifurcates or polarizes into the psychical and the physical; this tension, this polarity, is consciousness. When reality is in relative stability or equilibrium, this distinction does not emerge; this is the relative unconsciousness of primary and secondary automatism. Consciousness is thus generalized for the whole of nature, and the physicochemical and the biological are in turn sublated by the psychological categories. From this point of view we may even agree with Mr. Maudsley when he says that 'in the order of nature mind is not something detached, proceeding not

from it, independent of its laws; . . . it is itself nature in process of becoming' ('Problems of Life and Mind,' p. 205).

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DISCUSSION

ORGANIC IMAGES

I AM glad to find myself in accord with most of what Professor Titchener says, especially as to the uselessness of the results gained by the questionary in the matter of organic images, and as to the need of more careful and systematic investigation in this subject. To his disbelief in the genuineness of the organic images of the 80 or 89 per cent. of the students examined by French, I can add my own in the results of Ribot,[1] who says that almost all of his 100 subjects recalled fatigue, sometimes almost to hallucination, and the same for nausea; and 75 recalled thirst and 45 hunger.

My own conviction is that organic images are as conceivable as any other kind, have been experienced by myself, and *may*, presumably, be experienced by others; that the visual or auditory are no more *necessary* than the organic, because there have been scientific men and members of the British Royal Academy who have had no mental images at all.[2] The problem as to the kinds and amounts of organic images revivable does not, indeed, seem to me to be different from that of any other kinds of images, even visual or auditory. I believe that all images, of whatever kind, are the emergence into consciousness of some disposition. This disposition in turn is the result or effect of impressions that have or have not been in consciousness at the time they were received. I do not know any adequate cause for their appearance in consciousness. I see no reason why, if the attention be turned to it, the image of any previously experienced sensation should not form some subsequent state of consciousness. To me the real problem is, what *is* the organic image?

It has seemed to me that the criterion of an image of any kind not organic is a feeling which I can not at present differentiate from a faint organic sensation—the organic sensation accompanying general bodily activity, such as pushing or tugging, of which feeling

[1] 'Recherche sur la memoire affective,' *Revue Philosophique*, October, 1894, and 'La Psychologie des Sentiments,' Ch. XI., § 2.

[2] Galton, 'Inquiries into Human Faculty.' Also compare James, 'Psychology,' II., 53, who says that he is a good draughtsman but an extremely poor visualizer.

the focus seems to be somewhere in the center of the trunk. A sensation of any kind seems to me to be followed by this internal feeling, faint for sensations of ordinary intensity, strong and locally more concentrated for strong sensations. In my own case it seems to be in attendance upon the faintest sensation and to be noticeably absent in everything that I call an image. It is my only criterion and I know that it has deceived me; but it is generally correct. This is in spite of the fact that the attention can be so exclusively devoted to an image of any sense department that the sensation itself, whether of the same sense department as the image or not, drops for a brief time entirely out of consciousness.

The distinction between organic sensations and images seems to me at the present writing to be clearest with sexual images. In my own case the image has the specific quality of the organic sensation, but it is clearly not the localized sensation. For the localized sensation is invariably accompanied by cutaneous sensations. Of course, I know no way to prove, even to myself, that this state of consciousness is an image and is not a real sensation, *e. g.*, of swelling glands, localized circulation and visceral muscle movements. This might very well be, and I can not say, because I have no mental pictures of the anatomy of the hypodiaphragmatic region; but I think it is not, because it does not seem to be so intimately a part of my body as the sensation does. It is a state of consciousness having the organic quality and the characteristically image-like timbre.

I should like to place on record a description of some of my own organic images. Just before writing these words I very vividly imagined the pain of hitting my finger with a hammer (I do not know that the sensation has occurred these ten years!); and of tearing my finger nail to the quick. In the following list of organic sensations which I take from Ebbinghaus,[3] and which I have just now reread, I have italicized those that occur to me this evening with special clearness: hunger, satiety, thirst, *slaking, discomfort, nausea, fatigue, lassitude, rested feeling, oppression,* suffocation, buoyancy, *cork-cutting feeling,* sponge-tearing feeling, sharp knife feeling, *great height feeling,* restlessness, *relaxation,* depression, languor, mental lucidity, sleepiness, dullness; of which the cork-cutting feeling seems the clearest. It might be said that this is because I had with it auditory images of the little squeak that a steel knife makes in cutting a cork, and motor images of my hand holding the knife and cutting the end from a cork with a sawing motion; but the unpleasant quality came first! Images of certain other organic sensations are to me clearer than those of Ebbinghaus's

[3] 'Grundzüge der Psychologie,' I., p. 405.

list, *e. g.*, the organic sensation (thrill) somewhere near the diaphragm and the infinitesimal ache in the sole of the foot which are experienced a half a second or so after slipping on some moderately rough surface like a sanded floor, but without falling; and the painful thrill higher up in the thorax connected with the shrill, grating squeak of a slate pencil on a slate. This last is unaccompanied by visual images.

Hunger is the only organic sensation whose image I have at present any doubt about; and this is probably because I have not experienced that sensation for so long a time that I have quite forgotten what it feels like; and I have not an adequate motive to fast long enough to get the sensation. The skipping of a single meal is not enough.

On December 10, 1903, I paid close attention to my images for an aggregate of 22 minutes on three different occasions between 7:48 and 8:18 P.M., while smoking. In the first test I endeavored to confine myself to olfactory images and got 38 out of 63; in the second I tried touch and got 47 out of 57; in the third I tried motor images and got 10 out of 53. There were 1 pain image and 8 organic images in these 173. Seven of these were thermal images, two of them being of cold and the other five of heat. They were as follows: In the 'touch' series there occurred an image of the heat felt by my hand when lightly touching a coil of the steam-radiator. In the 'motor' series I imaged, second, the feeling caused by the spray of the surf one day last summer. This came first as a cutaneous image, but was followed by an image of its coolness. The third was an image of the cold shock of a shower bath after my swim in the surf; the fourth was another image of cold, followed immediately by an auditory image of the wind whistling through the bathing house; the fifth was the heat image of the hot and stuffy interior of another bathing-house; the sixth, an image of the warm water touching my feet, in a bay where I went to swim several times last summer; and the seventh was an image of an internal chilly sensation experienced by me at the end of a second swim taken on the same day. The pain image above referred to was the image of the aching of some part of my cheek caused by biting a very tart apple. In all these it is to be noted that I was not trying to get organic images; these experiences came spontaneously into consciousness. Of only one of them can I say that it was accompanied by an actual sensation.

I think it might be argued that images even of visual and auditory sensations are not 'essential as filling out the gaps in actual stimulation.' I think that any filling out that is necessary is accomplished by the *disposition*, which, as a separate event, is

not in consciousness. Thus I may hear the tone of a French horn, and know it for a French horn, and yet have in consciousness no visual *image* of the shape of this instrument, nor any auditory or articulatory image of the words 'French horn.' But the sound has a quality which I recognize as that of a French horn. That quality is in my own case an organic sensation or image[4] which seems to me to have all the specificity to apply to, or to serve as a medium of recognition for, that particular class of auditory sensations.

Thus in the ordinary affairs of life, *i. e.*, in my own daily work in the school-room, I am not conscious of images, with the possible exception of the periods devoted to the study of English literature, where, in reading such poems as the 'Ancient Mariner,' the images suggested by the lines do appear, and, of course, if I stop to pay any attention to them, my efficiency as a teacher is impaired. My mental activity is entirely sensational. My thoughts are spoken. It would be undesirable to have any thoughts in consciousness that could not be spoken. Consciousness is entirely made up of the sights and sounds (made by myself and others) and other sensations. Any images there may be for me then are not images (if I may be pardoned a bull), but dispositions. When I write a note under these circumstances, I do it without conscious reflection and have, as a general rule, none of the auditory images that accompany the writing of a letter at my own desk at home. It happens that four days in the week I read the Bible to 200 boys. I remember that images have occurred to me, chiefly auditory, I believe, during the reading and that I have hesitated at those times. The attention, diverted for a fraction of a second, has arrested the reading aloud for about a second. Thus it seems to me that the imaging power, in many of its manifestations, is in reality awakened only by accident and in a comparatively small number of people, who are naturally introspective; that attention may be called to it; and I am sure that, in my own case, a ten years' practice in turning attention to the image has developed my abilities in this direction to a considerable extent. I fully believe that I *can* recall the image of any organic sensation that I have had frequently enough to be crystallized (so to speak) into a disposition, but that it requires a greater frequency for organic sensations to form that disposition than for other sensations.

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[4] I say organic sensations or images because I confess that these feelings of relation (the familiarity feel and others) are so slight in intensity that they may be called images. That they are *organic* sensations or images of some kind seems likely from the fact that frequently I am positively confident that I have recognized the sensation in question, and that I shall soon have the proof of that recognition, the name; and yet there is a short period of time when the feeling of confidence persists *without* the name.

REVIEWS AND ABSTRACTS OF LITERATURE

History of Philosophy. WILLIAM TURNER, S.T.D. New York, Ginn & Company, 1903. Pp. x + 674.

The first thing which strikes the attention in looking over Professor Turner's 'History of Philosophy' is the proportion of space allotted to scholasticism. With the patristic philosophy it occupies almost a third of the book: as much as oriental and pre-Christian philosophy combined, and almost as much as all modern philosophy. And his treatment of the scholastic philosophy is, on the whole, excellent. He follows the fourfold division of scholasticism adopted by González in his 'Historia de la Filosofia.' The first period is the 'Period of Beginnings,' including Erigena, Gerbert and the School of Auxerre. This is followed by the 'Period of Growth,' which he elsewhere characterizes as the age of dialectic madness. This period includes, among others, Abelard, whom Professor Turner judges severely. He discredits Abelard's statement regarding the doctrines of William of Champeaux, characterizes him as 'primarily a dialectician' and as one who 'appeared to prefer victory to truth.' He denies that Abelard was a conceptualist and in general treats him as essentially an iconoclast and a man without importance for the evolution of constructive philosophy.

The third period of scholasticism was the 'Period of Perfection,' the golden age of scholasticism, the epoch in which the characteristic 'effort on the part of the schoolmen to unify philosophy and theology, to discover and demonstrate the harmony of natural truth with truth of a supernatural order . . . finally crystallized in the principles in which St. Thomas enunciated his definition of the relation between reason and faith.' St. Thomas is, of course, the central figure in this period and his system is presented with great clearness and at greater length than that of any other philosopher, ancient or modern. He quite overshadows Duns Scotus, who does not receive the amount of attention that his intrinsic importance and historical influence would seem to warrant. He is characterized as brilliant and subtle, but is classed as a lesser light. Professor Turner refuses, however, to explain the differences between Scotus and Aquinas by the simple assumption of a 'wish on the part of Brother John to contradict what Brother Thomas had taught.' There was a 'difference in the mental temperaments' of the two men.

The fourth period of scholasticism was the 'Period of Decay.' The causes of this decay were, he finds, both internal and external. On the one hand the failure to cultivate the sciences resulted in a lack of materials for futher development. The work of systematization had been done thoroughly and there was nothing left to do except to fall back upon disputes about the meaning of principles, to comment and to subtilize. Appeal to authority became predominant. On the other hand, the disturbed political conditions and the general relaxation in matters of religion and scholarship hastened the decline. This last

period is regarded simply as a period of decay, not as a period of preparation for modern philosophy.

Professor Turner does not divide scholasticism into Platonic and Aristotelian periods. He regards it as eclectic in character. His method of treatment certainly gives greater unity and individuality to this great period of philosophy than does the traditional method. The value of much of the apparently futile logomachy of scholastic philosophy in developing a vocabulary for philosophy might have been brought out more clearly.

Professor Turner's treatment of ancient philosophy is clear and well arranged; it does not call for special comment. The discussion of modern philosophy is more open to criticism. 'Humanism,' 'The Italian Philosophy of Nature' and 'The Scientific Movement' are treated with great brevity. Modern philosophy as a whole is regarded, with Erdmann, as 'Protestantism in the sphere of the thinking spirit.' Philosophy has separated itself from theology. Since Descartes, one of its chief problems, he asserts, has been the solution of the antithesis between mind and matter; this and the anthropocentric character of modern philosophy are due to the mistakes of Descartes.

Hobbes is dismissed with a very brief treatment; great emphasis is put upon the influence of Descartes upon Locke on the ground that 'the cardinal idea of Cartesianism, namely, the antithesis between mind and matter, appears as a tacit assumption in Locke's inquiry.' The treatment of Spinoza is excellent, one of the best in the entire book. But the appearance of Leibniz with Berkeley under the caption 'The Idealistic School' is startling. What sort of idealism are we supposed to be dealing with? We are told that both tried to remove the antithesis between mind and matter by reducing matter to mind, though Leibniz is spoken of on page 525 as only 'partially idealistic,' and it surely has not been shown that those who regard Leibniz as a realist have no ground on which to stand. But we are told again that the true significance of the movement is shown in 'the attempt to restore the æsthetic and religious ideals which were threatened,' etc. If we are to understand by 'idealism' here an æsthetic or ethical idealism, Leibniz and Berkeley have no right to a monopoly of the term. Some scholastic definitions and distinctions are in order here.

The traditional expositions of Leibniz and Berkeley, in connection with the rationalistic and empirical movements respectively, are not superseded by this attempt to treat them primarily with reference to a metaphysical problem. The rationalistic character of continental philosophy is not given the prominence it usually receives, and emphasis is put upon Kant's reaction against Humian empiricism and scepticism at the expense of his similar reaction against dogmatic rationalism; not that the latter is entirely lost sight of, but it is not kept in the foreground.

The exposition of Kant is brief but clear. In the discussion of his esthetic doctrine it should have been noted that the universality of the esthetic judgment is *subjective*.

German philosophy is one example of the nationalization of philosophy

which, according to the author, succeeded the illumination. But in England nationalization certainly began with Hobbes, however little Locke may have derived directly from him and from Bacon and however much he may have been influenced by Descartes.

Philosophy since Kant is treated very briefly and with Professor Turner's customary clearness.

In addition to the men and schools usually included in histories of philosophy there is an interesting chapter on the Traditional School in France, including De Bonald and Lamennais, and a summary of Catholic philosophy in the nineteenth century.

There are no very important omissions. Easmus Darwin's blundering attempts at an evolutionary theory might have procured him mention among the early contributors to the modern development of that theory; Thomas Hooker should have a place among British moralists, and Herschel among those who contributed to the development of scientific method. One anachronism should be noted. On page 637, Hickok is spoken of as a Spencerian. He was in sympathy with evolution, but most of his works were published before Spencer had worked out his theory.

Professor Turner's work as a whole belongs to the class of those which trace the history of systems rather than the development of concepts. He recognizes the fact that the history of thought is an organic growth and not a dialectical process. He appreciates the influence of political and social conditions, but the details of this influence, the concrete application of the principle might be very much more complete. He would, doubtless, admit that the history of thought is a phase of the history of civilization, but its relation to the other phases of this development is merely suggested. A closer articulation of the development of thought with the development of other forms of human activity is much to be desired. Professor Turner, in his paragraphs on the historical position of every important thinker or school, shows the relation of system to system so clearly that we can only regret that he did not give us also the relation of systems to the thought of the theologians and that of unsystematic thinkers, the Humanist, the early scientist and the unphilosophical public, and their relation to the development of art and of industry. But an elementary history of philosophy is practically limited to one volume and Professor Turner does not attempt to include everything. His book will be a very useful text or book of reference, particularly for the period which he has treated most thoroughly.

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Philosophisches Lesebuch. Herausgegeben von MAX DESSOIR und PAUL MENZER. Stuttgart, Ferdinand Enke, 1903.

This is a book of 258 rather large and closely printed pages, containing selections from seventeen different philosophers and comments upon them. About two thirds of the pages are devoted to the extracts, one third to the comments; but the latter are printed in somewhat smaller type.

The selections chosen are as follows.—Plato: the doctrine of ideas; the idea of the good and the doctrine of knowledge.—Aristotle: on syllogism; on knowledge; on the thought of thought.—Plotinus: on the One.—Thomas Aquinas: on universals.—Meister Eckhart: on love; how will compasses all things.—Francis Bacon: on induction; on idols.—Descartes: where one may doubt; on the nature of the human spirit.—Spinoza: God is the cause of all things; there are no ends in nature; the godly life.—Locke: there are no innate ideas.—Berkeley: on abstract ideas.—Hume: the origin of our ideas; the idea of necessary connection.—Kant: the characteristic of all metaphysical knowledge; is metaphysics possible? how is knowledge from pure reason possible? how is pure mathematics possible? transition from popular moral conceptions to philosophical.—Fichte: first introduction to the doctrine of knowledge.—Hegel: on the notion of the history of philosophy; what is reasonable is real.—Herbart: change as the object of a trilemma.—Schopenhauer: all living is suffering.

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The Distribution of Attention. J. P. HYLAN. *Psychological Review,* July and September, 1903, pp. 373–403 and 498–534.

Dr. Hylan's investigation covers two problems which have usually been treated separately, but are closely enough related to justify him in bringing them together under a single head. These are, first, how many things can we do at once and secondly, how many objects can be perceived in a single act of consciousness?

After a review of the literature of the first problem the writer concludes that we can not consider experiments in which any of the actions to be performed can become automatic with practice. After all results of that character are excluded there is found no evidence in the literature for the assumption that it is possible to distribute the attention. The writer's method of investigation was to ask his observers to count series of lines as they passed behind one, two, three, four or five openings in a screen. The results indicated that a slightly greater number of lines could be counted through two or three openings than through one. When four or five were observed at once there was always a decided loss. Since no attempt was made to exclude rhythm, it was concluded that the saving when present, was due to the ease with which the lines could be grouped. This interpretation is rendered the more plausible by the fact that in a similar experiment with series of tones of different pitch, when the rhythmic grouping was rigidly excluded, there was always a loss of time in counting the series simultaneously. There is, then, no evidence that it is possible to distribute the attention between groups of perceptions or actions.

The second part of the investigation is devoted to a solution of the old controversy as to the interpretation of the results of experiments on the extent of consciousness. Do we, as Wundt and many of his followers claim, actually receive four or five visual impression in a single act of the attention, or is the perception merely a successive interpreta-

tion of a memorial or sensory after-image—an interpretation that is completed some seconds after the exposure of the objects has ceased? Dr. Hylan brings strong evidence in favor of the second theory, that has been held by James, among others.

On the assumption that the perception is a successive counting of the objects retained in what Fechner calls the 'memorial after-image,' we can understand why fewer complex than simple objects can be perceived at a single exposure. It is merely that the recognition time for the complex is longer, as Cattell has shown, and that consequently fewer recognitions can be made in the time that elapses before the image fades. The explanation is made the more convincing by a series of experiments with letters on backgrounds of different shades of gray. It was found that where there was least contrast between background and letters fewest letters could be recognized. The images in this case would, of course, fade most quickly. More ambiguous evidence to the same effect is furnished by the fact that, as a rule, those subjects for whom the memorial after-image was longest could see the greatest number of objects at a single exposure.

The frequently stated fact that, with practice, sensations at first distinct tend to fuse into a single whole was confirmed in this investigation.

If we accept Dr. Hylan's conclusion that in all cases where several distinct objects are apparently seen at once or are seen with a very short exposure there is really a separate successive act of the attention for each object, we are apparently driven back to the Wolffian doctrine that the mind can perceive but one thing at a time. It can not be doubted that the evidence presented makes strongly for this interpretation. It must be added, however, that Dr. Messenger makes an equally strong case for the statement that when the group is small or very familiar there is an immediate association between the perception and the numeral without counting. And this interpretation is also in harmony with the results that Dr. Hylan obtained in a series of recognition reactions to disparate stimuli. In either case we have not simultaneous recognition of many objects, but either successive counting in a memorial after-image, or the recognition of the several elements as a single object with the numeral attached.

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The Refutation of Idealism. G. E. MOORE. *Mind,* October, 1903, pp. 433–453.

Mr. G. E. Moore is among those who believe that there is too much dogmatic slumbering in the camp of the idealists. The latter are accustomed to assume that their 'spiritual' interpretation of the world is supported cumulatively by many arguments, whereas their whole case rests upon one crucial argument. This argument, which Mr. Moore proposes to refute to the total discomfiture of idealism, is summed up in the proposition, '*esse est percipi.*' The refutation of the argument is stated (1) dialectically and (2) analytically.

1. The above proposition is a tautology unless *percipi* adds something to *esse*. The important question, then, is that of the inseparability from *percipi* of *x*, or that in *esse* which exceeds *percipi*. But there is no self-evidence attaching to such a proposition, nor any ground for it, save in such a psychological interpretation of experience as permits the distinction of *x* from *percipi* to lapse again.

2. Such is the case with the idealist who deliberately reduces object of experience to content of experience. His contention is briefly as follows: One finds blue, *e. g.*, as a subject of discourse, in one's sensation of blue. But it is impossible to differentiate blue from the content of the sensation of blue. Hence blue as other than the quality or attribute of my sensation of blue has no meaning. The idealist regards the object of awareness as a part of the awareness, since he can not differentiate it therefrom. Mr. Moore contends that this confusion contradicts the meaning of awareness. To be aware is to be aware of something; that is, the awareness and the 'something' are two distinct factors of the situation. Every consciousness, if this term is to mean anything, must be regarded as superadded to its object. It can never, therefore, itself give evidence of its indispensableness to that object. Consciousness is a specific term and can not be regarded as coextensive in its connotation with the term being.

Apart from its prolixity and obscurity this article suffers from a more serious defect. The idealistic fallacy, the author remarks, 'is due to the fact that though philosophers have recognized that *something* distinct is meant by consciousness, they have never yet had a clear conception of *what* that something is.' 'My main object in this paragraph,' he adds, 'has been to try to make the reader *see* it; but I fear I shall have succeeded very ill.' And this estimate of his success is not too modest. The paragraph in question demonstrates that the sensation factor common to sensation of blue and sensation of yellow is separable from these objects, and that it signifies some 'unique relation' in which each stands. And there we are left.

But this deficiency does not invalidate the main contention of the article. It is difficult to see how the refutation of the definition of being in terms of consciousness can be regarded as other than successful. Subjective, though not Platonic, idealism rests upon this principle and can not survive it. There remains the realist's more serious task, the reinterpretation of that category of subjectivity whose ontological use he discredits.

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Ethics a Science. E. B. MCGILVARY. *Philosophical Review,* November 1903, pp. 629–648.

The writer states the difference between a science and an art; science is knowledge, while art is skill in production. An art is often called a science, and a science is often called an art. This mistake has been made in the case of logic, and it is made when ethics is defined as the art of correct conduct. Morality is the art in which various persons

are more or less proficient. Ethics is the science of the principles of an art.

He asks, Is ethics a descriptive science? The majority of writers, he says, have considered it not descriptive, but normative, while a few maintain that it is entirely descriptive. The author's position is that ethics as science, like all science, is descriptive of facts. Science is knowledge, it is indicative; it is not normative, not imperative. The only rules that a science lays down are the rules of its own procedure. The science of jurisprudence and the science of ethics are both alike in that they do not lay down laws, but merely set forth facts. Ethics describes the various types of morality and the results flowing severally from these types. To the ethical scientist practical moral questions may be of stupendous interest. As a man he may have his decided preferences for certain ethical principles and phenomena, but as a scientist he may be impartial. The task of ethics is entirely descriptive, it is an unimpassioned survey of all the accessible facts. Such description does not exclude scientific criticism. As to whether ethics is a theoretical or a practical science, it is maintained that every science is, as a science, theoretical; it is a matter of *seeing,* not of *doing*. The practicality of ethics is hard to estimate, but it is undoubtedly great. Its practical value consists largely in two ends it gains. First, it secures a progressive liberation of the mind from the bondage of moral prejudices, many of which are serious bars to progress in civilization. Not all types of morality are equally conducive to human welfare. This is the negative work of ethics. The second result brought about is positive. This consists in the emergence of new and better ideals, suggested by study of actual moral conditions.

The next question considers whether ethics shall be studied out of intellectual curiosity or for its utility. The answer is that there is no necessary incompatibility in the two motives, if there is no undue haste in observation and generalization. The ethicist must deal with moral phenomena without fear or favor. No reverence for moral laws, no devotion to moral ideals, must be allowed to interfere with an impartial handling of the data of ethics. It is extremely important that the methods of ethics should be scientific. But while scientific, ethics does not boast of mathematical precision, any more than economics does. The problem is too complex in both sciences.

In conclusion, the writer briefly glances at the claim often made that ethics is a branch of philosophy rather than a science. His position is that ethics, dealing with phenomena or facts of experience by inductive methods, is an empirical science.

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Art and Morality. JAMES LAING. *International Journal of Ethics,* October, 1903, pp. 55–66.

This article presents a condensed and rapid review of certain historical data which are regarded as supporting a belief in the interdependence

of art and morality. Theoretical discussion, accordingly, is avoided. The assumption being made that 'æsthetic and moral or social phenomena' are alike 'modes of spiritual manifestation,' the general theory is maintained that 'the art impulse . . . has been . . . a correct and accurate exponent of the moral movement of the period to which it belongs.'

Concrete illustrations of this doctrine are drawn in historical order. First, in the primitive society of Babylonia, India and Egypt, architecture especially reveals the attempted expression of 'the very deepest of moral ideas.' Then, the fate which befell Greek life and art, particularly that of Pericles' age, affords a conspicuous example of this relation. 'Belief in the ideal of the state . . . destroyed the moral possibilities of Greece,' and the restriction of spiritual expression to the 'sensuous perfectness of the human form . . . killed Athenian art.' Rome followed with her 'grossness of morals' and consequent 'prostitution of art.' Painting is the specific example drawn from mediæval life to reveal the reflection in art of certain ethical truths of Christianity. Furthermore, "in the decadence of the sixteenth century, the dawn of the idea of 'art for art' was precisely the point at which art and morals ceased to have an essential connection." Finally, music and poetry, in more modern times, support the theory. Goethe and Wordsworth illustrate it.

This theory of the interdependence of art and morality might be regarded even as necessary and inevitable. But the acknowledgment would fail to contribute to the solution of the essential questions: Should art teach morals? and, Has art an inherent tendency toward immorality? The first of these is a theoretical question to the solution of which historical data afford but a partial basis. The second question suggests that art might incidentally express the morality of an age and yet have an inherent tendency toward immorality. This is the deeper question, and historical data might pofitably be employed in its solution.

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JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. January, 1904. Vol. XIII., No. 1. *Aristotle's Posterior Analytics: I. Demonstration (pp. 1–15):* JOHN WATSON. – 'The proper subject of the treatise is the method of science,' and "science is the knowledge of the 'cause,' or of that which 'can not be otherwise.'" The premises of a scientific or demonstrative syllogism are obtained by induction and must be (1) true, (2) primary or indemonstrable, (3) expressive of the ground or essence and hence not only 'universal' but *convertible.* Bound up with these conceptions is the distinctively Aristotelian doctrine that each science, while making use of *axioms* or principles common to all knowledge, has certain generic principles or *postulates,* peculiar to itself, and by which it is insulated

from other sciences. *The Reality of the Finite in Spinoza's System (pp. 16–29):* ELIZA RITCHIE. – The charge of *acosmism,* preferred against Spinoza by Hegel and others, is due to reading into the philosopher a dualistic conception of the relation of substance and modes which is utterly foreign to his meaning. The dependence of modes upon God implies that God is immanent in modes—infusing them with a reality that makes of them anything but negative or illusory appearances. In support of her interpretation Dr. Ritchie cites numerous passages all tending to show that *natura naturata,* or the totality of individuals, was conceived by Spinoza as an eternally real and necessary correlate of *natura naturans* or God. *Reality and Belief (pp. 30–50):* A. K. ROGERS. – "The fundamental basis of the sense of reality . . . lies in the relationship to some personal need or demand. The 'real' is that which enables us to satisfy our active impulses." We become conscious of our needs, however, only when they are checked. 'Facts' are 'values,' but they are values which have got themselves well established. Rationality is but the need for harmony and should not always be given preference, as a determinant of belief, over the other and more explicitly emotional demands of our nature. *Reviews of Books:* R. B. Haldane, *The Pathway to Reality,* WILLIAM CALDWELL. J. M. Baldwin, *Dictionary of Philosophy and Psychology,* W. A. HAMMOND. André Cresson, *La Morale de la raison théorique,* GEORGE S. PATTON. L. Busse, *Geist und Körper,* W. B. PILLSBURY. C. C. Everett, *The Psychological Basis of Religious Faith,* W. G. EVERETT. Summaries of Articles. Notices of New Books. Notes.

REVUE PHILOSOPHIQUE. No. 12, December, 1903. *Les Principes de la Morale Positiviste et la Conscience Contemporaine (pp. 561–591):* G. BELOT. – Comte's moral philosophy has not the weakness of his better known philosophy of science and should be studied as the cornerstone of his system. The will of humanity, not any objective entity called the good, determines what is right. Altruism is the means of discovering this will. *De la Sensation à l'Intelligence (Suite et fin., pp. 592–618):* A. BINET. – Discusion of visual and verbal types. It is impossible to describe a pure touch-sensation without reconstructing it by our judging and comparing activity, through images. Cases of hyperesthesia confirm this. *Recherches Expérimentales: Sur l'Aperception des différences tactiles (pp. 619–627):* L. MARILLIER et DR. J. PHILIPPE. – There is a special discriminative power to discern differences of form, in cutaneous sensations; it is not a matter of intellectual interpretation. *Revue Générale: Les récents Dictionaires de Philosophie (pp. 628–648):* A. LALANDE. Review of F. Kerchner's *Wörterbuch der Philosophischen Grundbegriffe* (4th ed., Leipzig, 1903); E. Goblot's *Le Vocabulaire philosophique* (Paris, 1901); *Baldwin's Dictionary of Philosophy and Psychology* (N. Y. and London, 1901–2); *Vocabulaire technique et critique* of the *Société française de philosophie,* Fascicules 3 and 4 published in the *Bulletin de la Société de Philosophie* (Paris, 1902–3). The last excels the others (ranged above in order of merit)

by adding to each article a 'Radical international' containing the different roots to be used as technical terms indicating the various senses of the general term discussed in the article. The author urges the adoption of these roots in philosophic terminology. *Analyses et Comptes Rendus (pp. 549–66). I. Psychology: J. Maxwell, Les Phénomènes Psychiques* (Paris, Alcan, 1903): G. L. DUPRAT. Grasset, *Hypnotisme et la Suggestion* (Paris, Doin, 1903): G. L. DUPRAT. Revel, *Les Mystiques devaut la Science, on Essai sur le Mysticisme universel* (Paris, Bodin): A. GODFERNAUX. Hitchcock, *The Psychology of Expectation* (Yale University): C. Bos. Th. Lipps, *Einfühlung, innere Nachahmung und Organen-empfindungen* (Leipzig, Engelmann, 1903). *II. Sociology:* R. Worms, *Philosophie des Sciences Sociales* (Paris, 1903): J. DELVAILLE. M. Songo, *La Conscienza Criminosa* (Turin, Bocca, 1903): G. RICHARD. *Revue des Périodiques Etrangers:* American Journal of Psychology, J. PHILIPPE. New Books. Table des Matières du Tome LVI.

ZEITSCHRIFT FÜR PHILOSOPHIE UND PHILOSOPHISCHE KRITIK. Bd. 123, 1. *Das Grundgesetz des Lebens:* W. v. TSCHISCH. – Inorganic matter struggles for mere existence, as in all chemical processes; the living is never satiated, it fights for *increase,* and, therefore, for nourishment. Single cells are immortal save for outward circumstances. In complex organisms, to propagate the species the individuals must disorganize, die. Variation is due to the varying supply of nourishment. Struggle for increase marks also the psychical life. *Unter welchen Voraussetzungen hat sich bei Hegel die Wertschaetzung des Staates entwickelt, und wie ist dieses zu beurteilen:* W. FICKLER. – Hegel's 'intellectualistic' starting-point has led him to give a false importance to the state, that tends to make religion seem superfluous, art, a mere concept. His system makes individual man a mere point of intersection. But man is a personality; a fact that makes evil more than a mere negation, but at the same time gives a glimpse of a new, an 'Ueberwelt.' *Darstellung und Kritik von J. St. Mills Theorie der Inductiven Methode:* H. REICHEL. – Mill builds up his inductive method in the natural sciences, but maintains that the 'Geisteswissenschaften' attain certainty only by the same method. For Mill, induction is logic. Deduction and analogy are imperfect inductions. The criticism of Mill's theory is to follow. *Ein Neuer tragischer Held:* R. SOKOLOWSKY. – Ibsen's 'Emperor and Galilean' is made the text for a theory of tragic drama. In true tragedy the hero's purpose is in some measure the purpose of the universe. Disaster is the fruit of his imperfect perception of the world-harmony. Ibsen's real hero is 'pure humanity,' or more truly, the truth and beauty of the world-whole. His drama fails, however, to convince the audience that the good of the actual world is in question. *Religion und Entwickelung:* H. SIEBECK. – A summary is given of Eucken's 'Der Wahrheitsgeshalt der Religion'; the next issue will give Professor Siebeck's contribution, which he believes will serve to complete and confirm the position taken by Eucken. *Parallelismus oder Wechselwirkung:* F. PAULSEN. – In answer to Busse's 'Geist u. Koerper, Seele u. Leib,' it is urged that idealism does *not* do away with

parallelism, but asserts coordination between the real, willing, feeling substance and the sense intuition. Interaction is untenable until it is necessary to call in the psychical to complete an otherwise imperfect physical chain of causes and effects (to be concluded).

ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE. November 15, IX., 4. *Ist die Annahme von Absolutem in der Anschauung und dem Denken möglich?* K. GEISSLER. – Neither a point nor zero is absolute; the former being a minimum; the latter, relative to the equality of a, in $a - a$. But zero, in so far as it is freed from the number series, and the zero-point, as a limit to extent, not itself extended, has an absolute character. The infinite is not absolute; but in common with the other terms named requires the conception of the absolute. As an intuition the absolute is possible, not demonstrable. *Die Religionsidee:* D. KOIGEN. – Religion is based on 'Allgefühl,' which is one of five possible solutions of the 'antinomies' of feeling. It means *intimacy* with the world, the condition which knowledge attains, climbing from the perception of mere *causality,* through perception of *continuity.* The highest individual perfection in religion is thus that each man should be his own priest and exhorter. *Die Französische Metaphysik der Gegenwart:* A. GUREWITSCH. – A summary of Bergson's position. It is an extension of Avenarius's principles. The starting-point of praxis, action, having been rejected for that of pure experience, it is shown that the continuity of mere happening (*Geschehen*) leads through 'concentration' to the contrasts of quality and quantity, freedom and necessity, etc.; mind and body are to be distinguished not as inner and outer, but in terms of past, present and future. *Gesetze des Geschehens:* B. WEISS. – The last of three articles attempting a classification of sciences, and a summary of the laws within each. The justification is here offered for the assertion that all such laws are fundamentally mechanical. Each science can be apprehended as a science of development. The position taken is an amendment of Spencer's theory.

ARCHIV FÜR GESCHICHTE DER PHILOSOPHIE. October, 1903. Bd. X., Heft 1. *Über die Aristotelische Definition der Tragödie (pp. 1–27):* C. HEBLER. – A discussion of the four terms, imitation, purification, pity and fear. Aristotle rightly describes the experience of the audience of a good tragedy. Fear through sympathy is to be distinguished from 'Mitfürcht.' *Zur Dämonologie Plutarchs von Chäronea (pp. 28–51):* DR. EISELE – Plutarch's belief was derived from his study of the Delphic oracle rather than from Plato's teaching. It accorded in general with popular belief, but, in the interest of pure religion, he combated the belief in evil demons. The demon is a peculiar power residing in the enthusiastic soul which accompanies the individual like another ego. *Die Kategorien des Aristoteles (pp. 52–59):* R. WITTEN. – The source of the categories is purely dialectical, the content of isolated words arranged under genera. But, as A. naïvely unites words and things, the categories

serve as a bridge between dialectic and empiric. *Das Recht und seine Durchführung nach K. Chr. Planck (pp. 60–93):* O. L. UMFRIED. – Planck's hope in religious and moral consciousness is the view of a selfish and intellectualistic society. Germany at this time can be regenerated only through trades unions. And Germany is to be the center of reform in Europe. *Nietzsche und die Entstehung der sittlichen Vorstellung (pp. 96–125):* P. SCHWARTZKOPF. – A formal derivation of morality always neglects the significance of the individual. Nietzsche set the truth of life as the content, its soundness and power as the form of virtue. Future Ethics has but to correct his one-sidedness in representing life. *A report of the International Congress of the Historic Sciences,* held in Rome, April 2–9, 1903, covering the transactions of the section devoted to the history of philosophy. The papers were devoted to the period of the Rennaissance. *A summary of the German literature on 'Die alte und die mittlere Stoa,'* published since 1897, with special reference to Barth's 'Die Stoa.'

Armstrong, A. C. *Transitional Eras in Thought.* New York: The Macmillan Co. 1904. xi + 347 p. 8vo. $2.00.

Barth, Paul. *Die Stoa.* In Fromanns Klassiker der Philosophie. Stuttgart: Fr. Fromanns Verlag. 1903. 191 p. 8vo. 2.50 m.

Demery, Georges. *Mechanisme et Education des Mouvements.* Paris: Félix Alcan. 8vo. 9 fr.

Engel, Eduard. *Psychologie der Französischen Literatur.* Berlin: Leonhard Simion Nf. 1904. 243 p. 12mo. 3.50 m.

Hadley, Arthur Twining. *Freedom and Responsibility.* New York: Charles Scribner's Sons. 1903. 175 p. $1.00.

Hoffman, Frank Sargent. *Psychology and Common Life.* New York: G. P. Putnam's Sons. 286 p. 12mo. $1.50.

Lipps, Theodor. *Leitfaden der Psychologie.* Leipzig: Wilhelm Engelmann. 1903. ix + 349 p. 8vo. 9 m.

Sergi, G. *L'origine dei fenomeni psichici e il loro significato biologico.* Torino: Fratelli Bocca. x + 367 p. Sec. ed. 8vo. Lire 8.

Siegel, Carl. *Zur Psychologie und Theorie der Erkentniss.* Leipzig: O. R. Reisland. 1903. viii + 180 p. 3.60 m.

Wernick, G. *Zur Psychologie des ästhetischen Genusses.* Leipzig: Wilhelm Engelmann. 1903. iv + 148 p. 8vo. 2.40 m.

Whyte, Alexander. *Bishop Butler.* New York and Chicago: Revell. 1903. 223 p. 12mo. $1.25.

NOTES AND NEWS

In accordance with the announcement of its editors the *Psychological Review* entered in January upon a new series. It will be issued in two sections; an article section, containing original contributions, appearing bimonthly; and a literary section known as the *Psychological Bulletin*, containing critical reviews, notices of books and articles, short discussions and news, appearing monthly. The new series begins under the joint editorship of Professor J. Mark Baldwin and Professor Howard C. Warren.

A cablegram to the New York *Times* states that by the will of the late Herbert Spencer all rights and property in his books and investments are given to the trustees, the Hon. Auberon Herbert, Dr. Henry Charlton Bastian and David Ducan, with instructions to employ the yearly revenue "in resuming and continuing during such period as may be needed for fulfilling my express wishes, but not exceeding the lifetime of all descendants of Queen Victoria who shall be living at my decease and of the survivors and survivor of them, and for twenty-one years after death of such survivor, the publication of the existing parts of my 'Descriptive Sociology,' and the compilation and publication of the fresh parts thereof upon the plan followed in the parts already published." Afterward all copyrights, stereotype plates, etc., are to be auctioned and the proceeds divided among a number of scientific societies. The will orders that Spencer's autobiography is to be published simultaneously in Great Britain and the United States, and requests David Duncan to write a biography in one volume of moderate size.

The New York Branch of the American Psychological Association and the Section of Anthropology and Psychology of the New York Academy of Sciences met together on Monday, January 25, at 4 P.M. and 8 P.M., at the American Museum of Natural History, New York City. The program of the meeting was as follows: Dr. Henry Rutgers Marshall, 'Primary and Secondary Presentations'; Professor Margaret F. Washburn, 'The Genetic Relation of Organic Sensation and Simple Feeling'; Dr. Francis Burke Brandt, 'The Universe's Place in Man'; Mr. W. F. Dearborn, 'Retinal Local Signs'; Dr. Irving King, 'The Ultimate Relation betwen Religion and Magic: a Chapter from the Psychology of Religion'; Professor Robert MacDougall, 'The Distribution of Errors in Spelling English Words'; Dr. Henry Davies, "Dewey's 'Studies in Logical Theory.'" In addition Mr. Steele reported on the photographic investigation of eye movements which is being conducted at the Yale Psychological Laboratory.

Dr. R. S. Woodworth of Columbia University will have charge of the laboratories of anthropometry and psychometry in the ethnological department of the Louisiana Purchase Exposition.